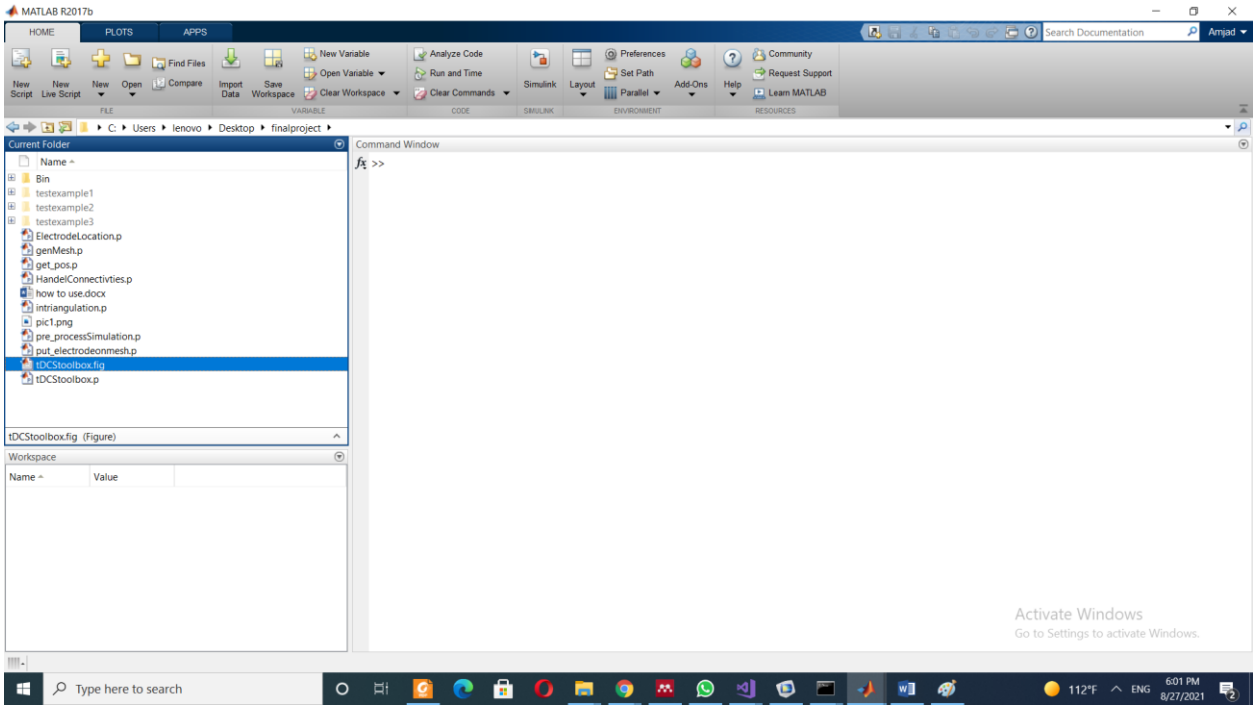
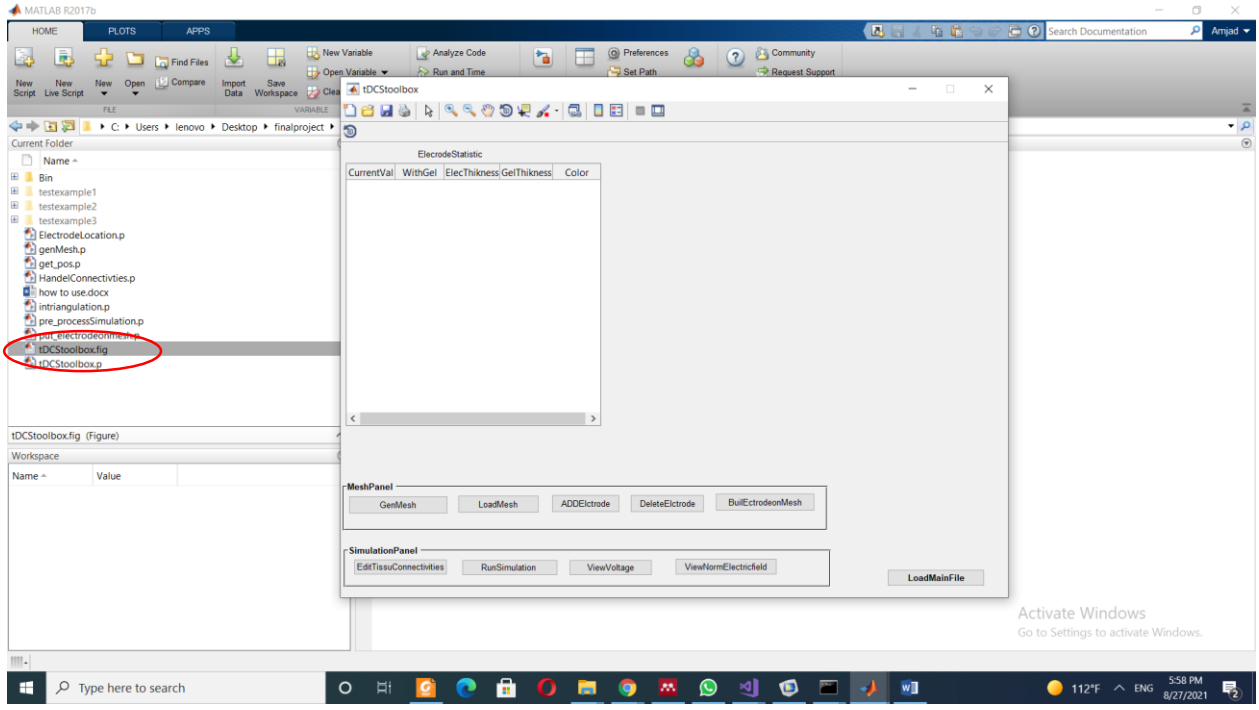
Note: -This toolbox work with windows-64bit platform and MATLAB 2017 and up.

Note:- folder name or file name should not contain space.

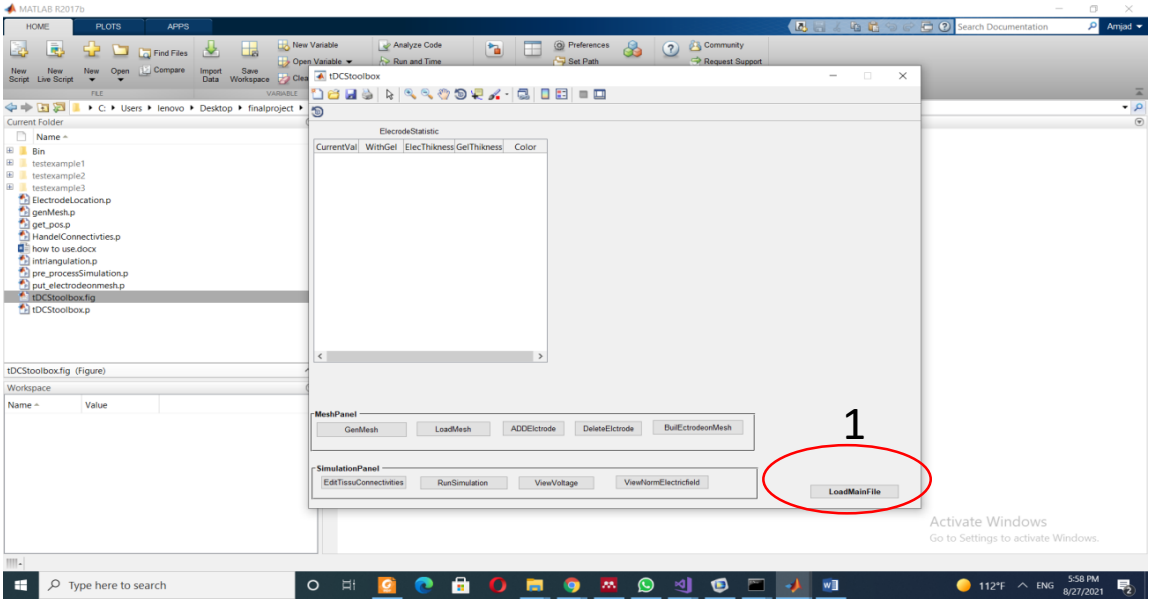
1-Open tDCS toolbox main folder in MATLAB as show bellow:



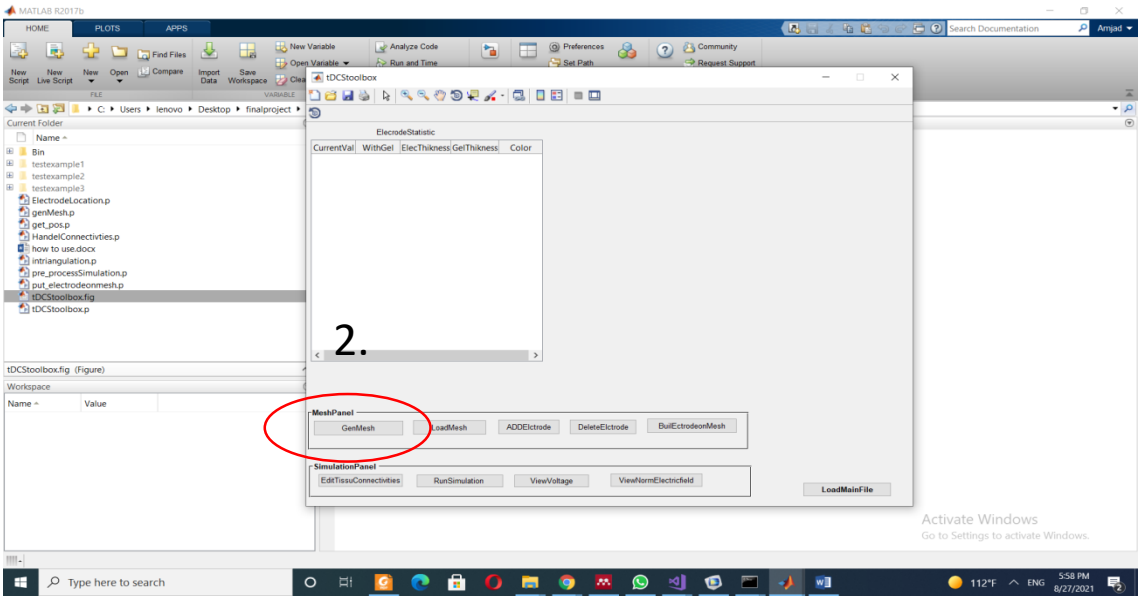
2-click on tDCStoolbox.fig to pop up the interface as shown in picture below with red circle



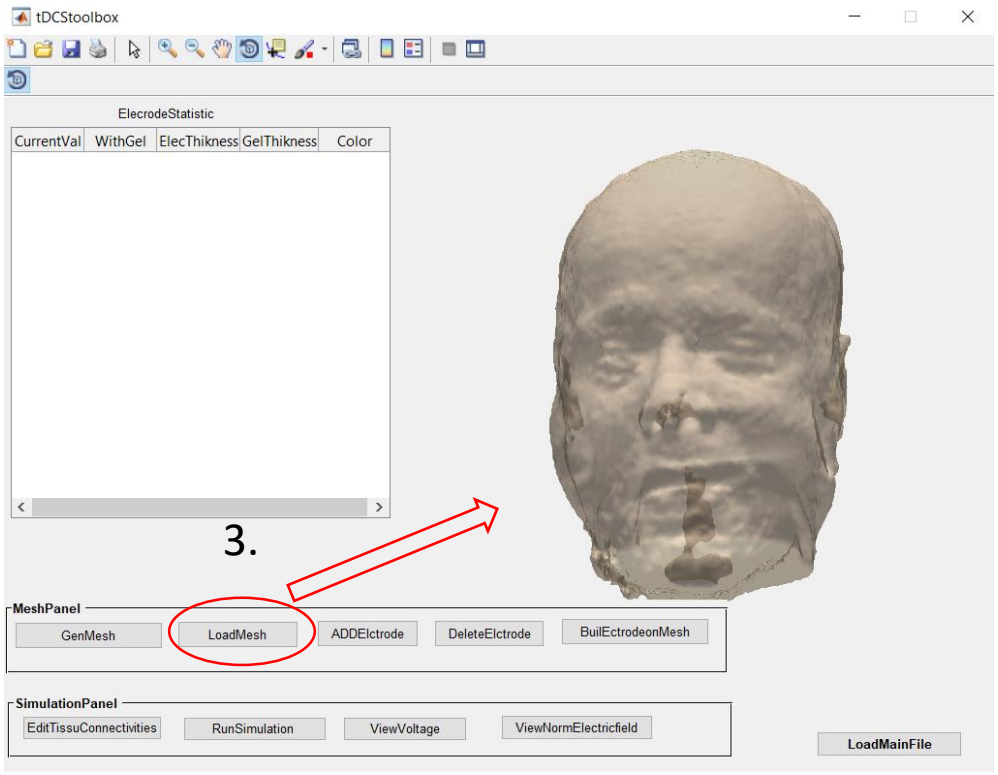
3-After GUI interface pop up then load the MRI image (T1 or T1&T2) by click on (load main file) button as shown in picture bellow with red color. in this toolbox three test MRI (T1) image are putted for test. one can find them in main folder of the toolbox.



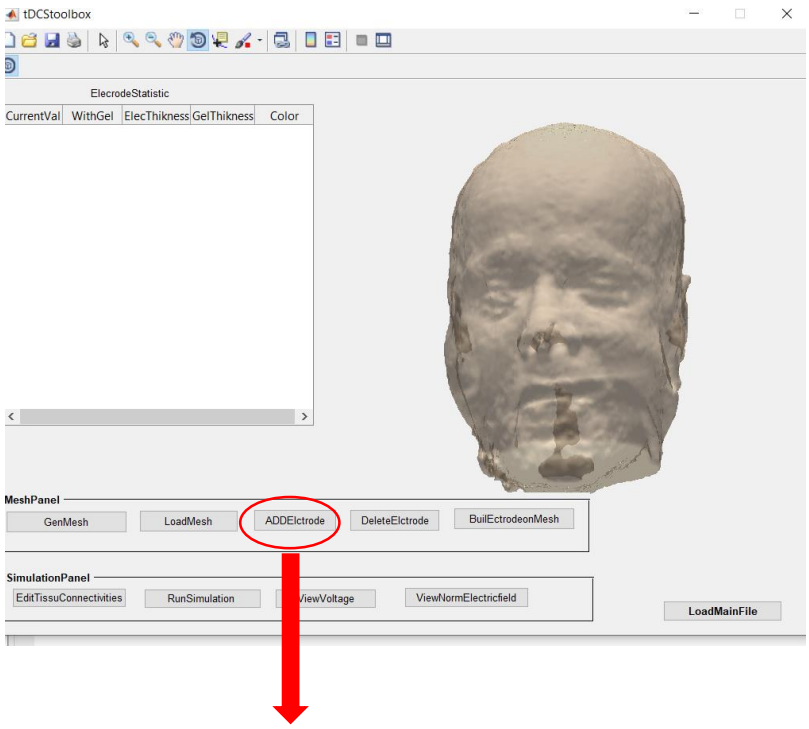
4-After you load image then by clicking on (GenMesh) button to start segmentation, surface creation and volume mesh generation. The final output mesh will be saved in MRI image folder with prefix (. mat) as shown below.

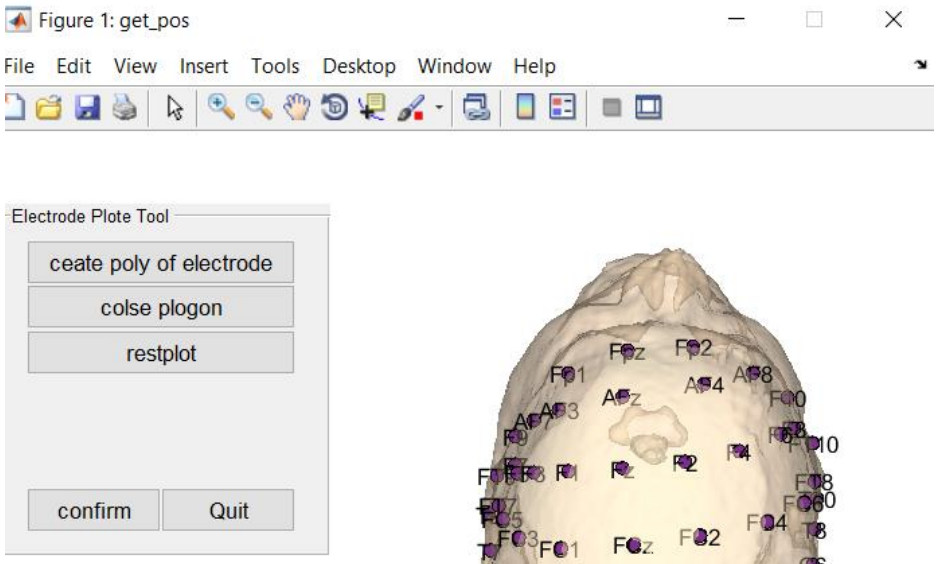


5-In order to view the generated mesh from previous step click (loadmesh) button the mesh will pop up in GUI as shown below.

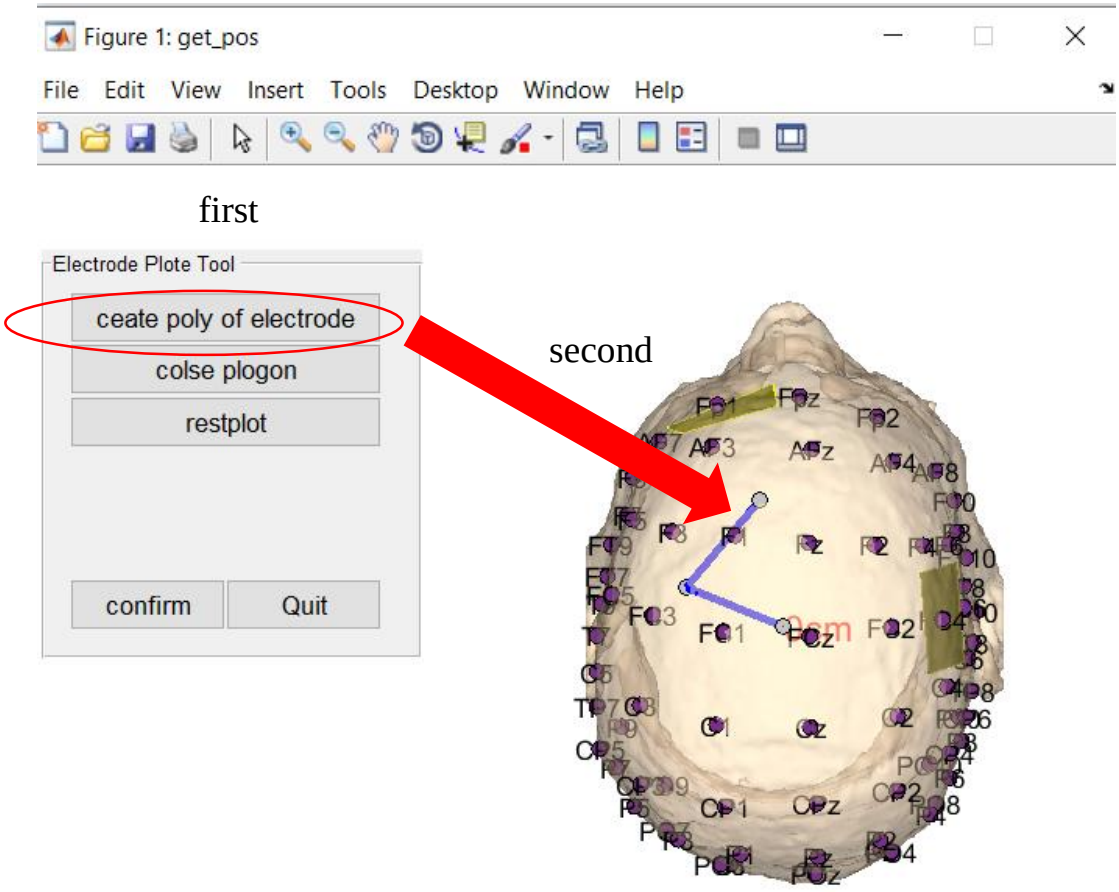


6-In order to add electrodes, click on (ADDElectrode) button. After click on it a new window will pop up where head marked with (10-20 system) as shown below.

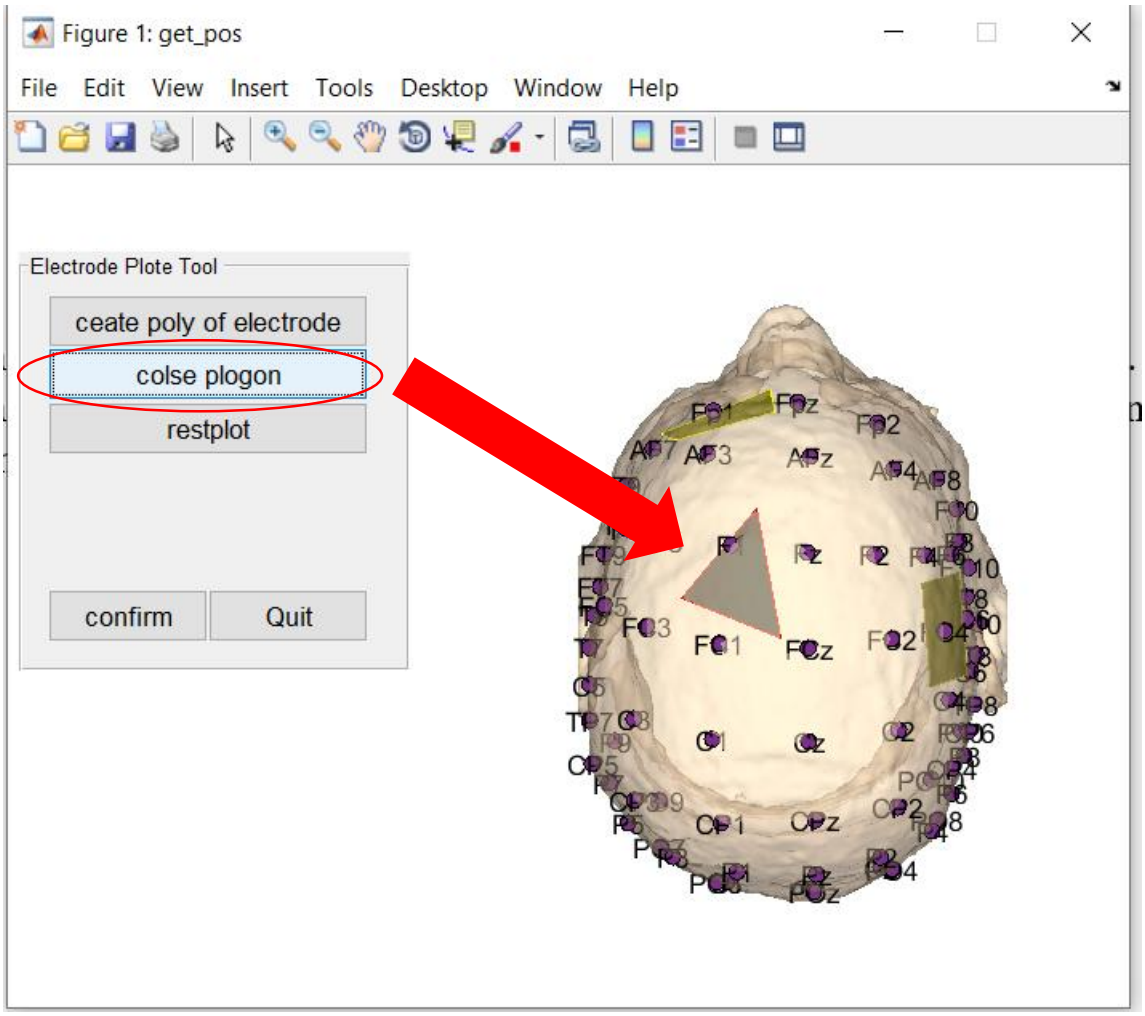




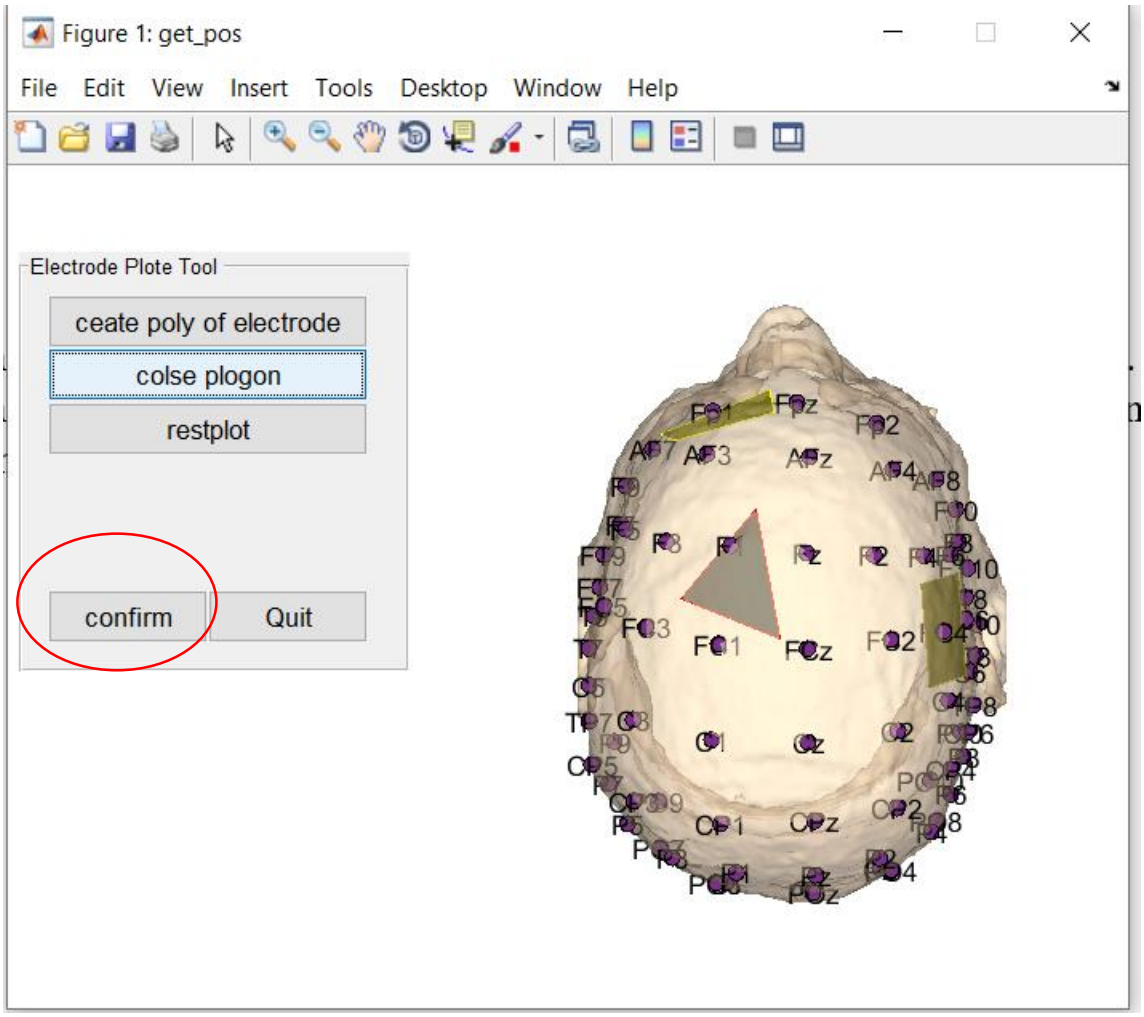
7-On a new window there are buttons on the upper left side to help you plotting the polygon of electrode. First click on ( ) rotating icon in main figure to align the head then click on same icon to close it when you finished. After that click on (create poly of electrode) button to start plot anew electrode then click with mouse where you want to plot electrode as shown below.



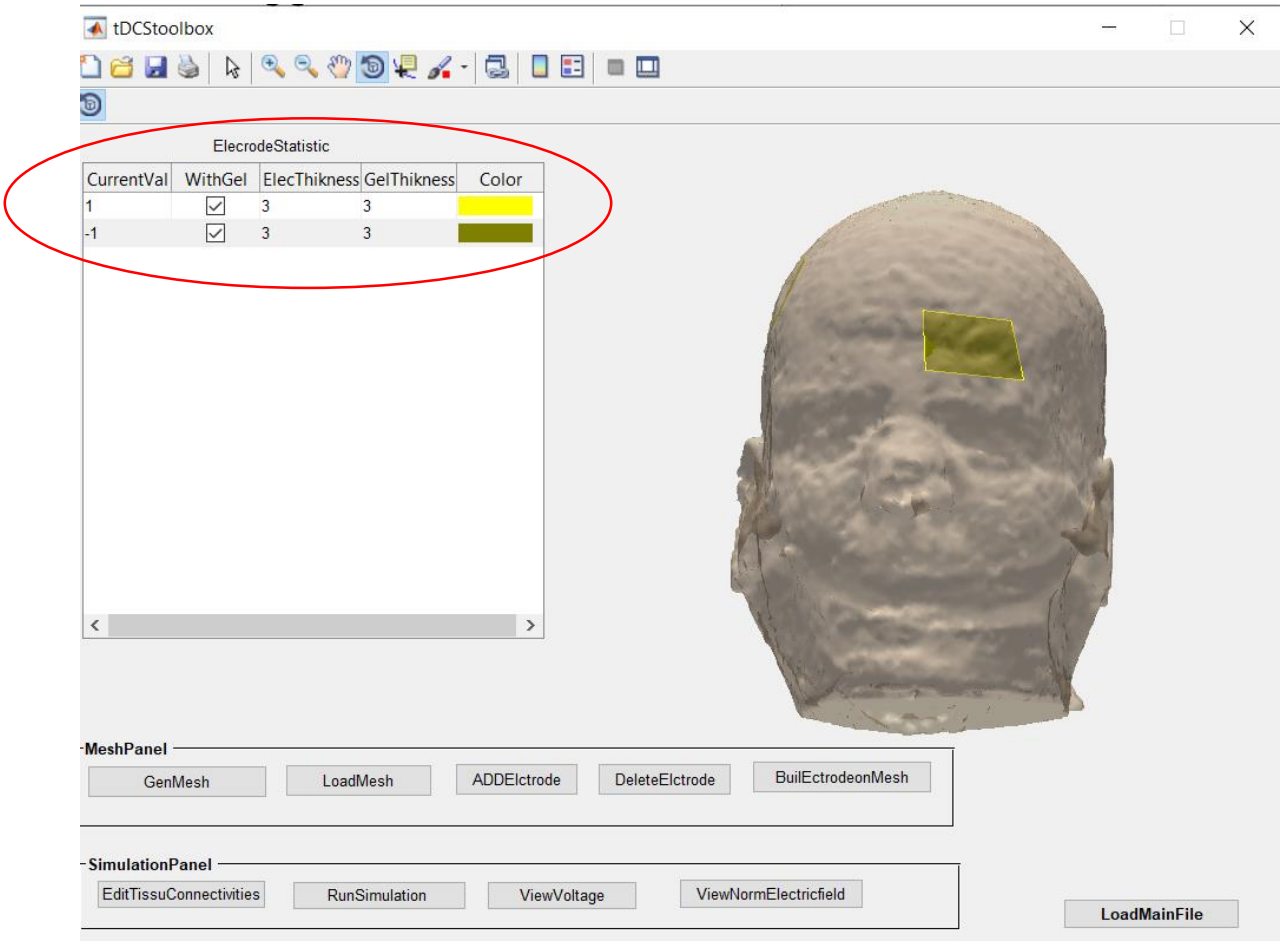
When you want to finish the plotting click on (close polygon) button as shown below.



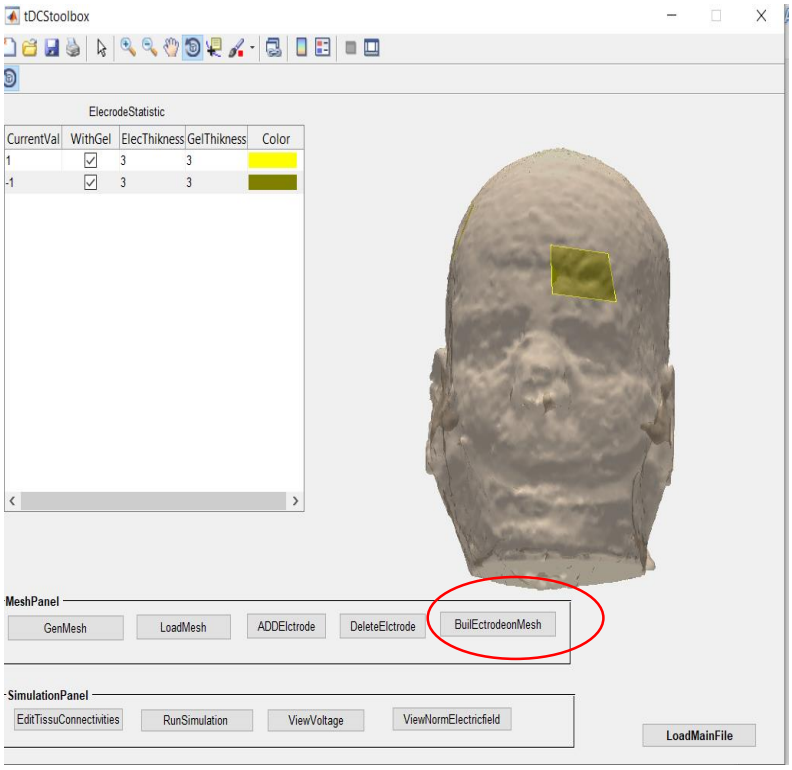
Finally confirm your plot by clicking on (confirm)button. There are more options if you want to rest your plot then click on (restplot)button.



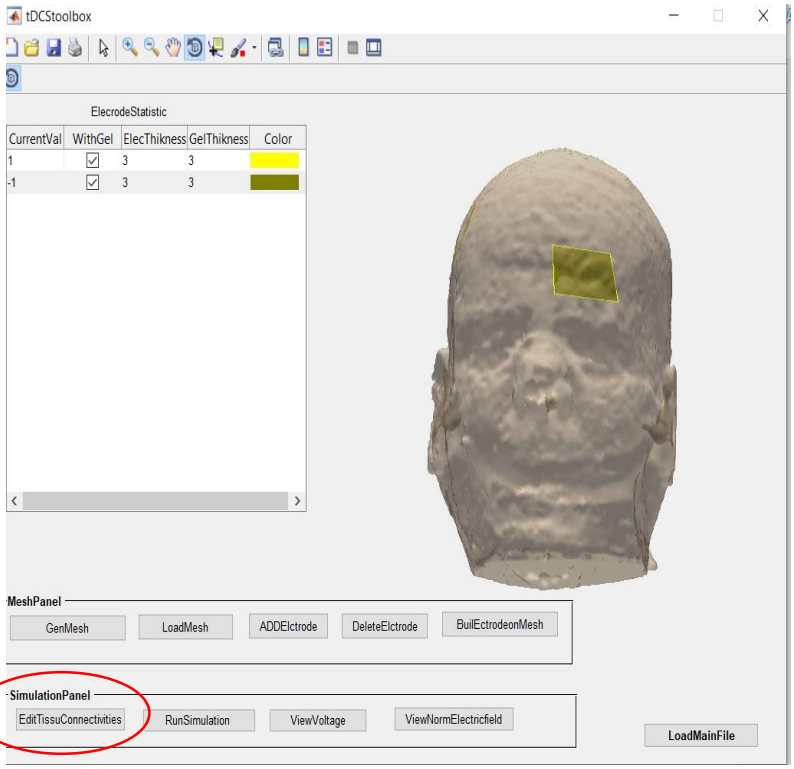
8-After finishing from plotting for each electrode you add there are row in table in upper left hand of main window you can add the parameters (electrical current, electrode with or without gel, electrode thickness in (mm) and if electrode with gel then add gel thickness in (mm).



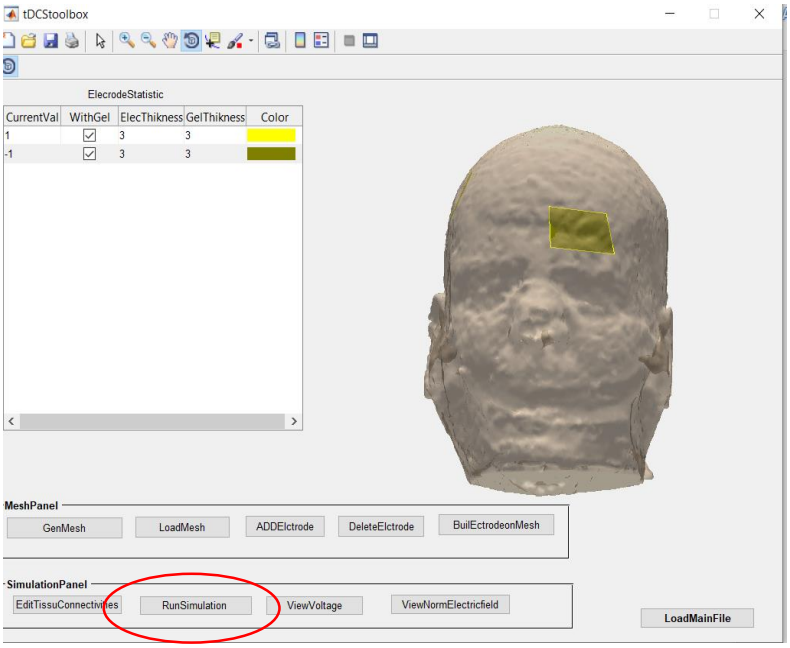
9-Next step is to create the mesh of electrode clicking on (BuildElctrodeonmesh) button as shown below.



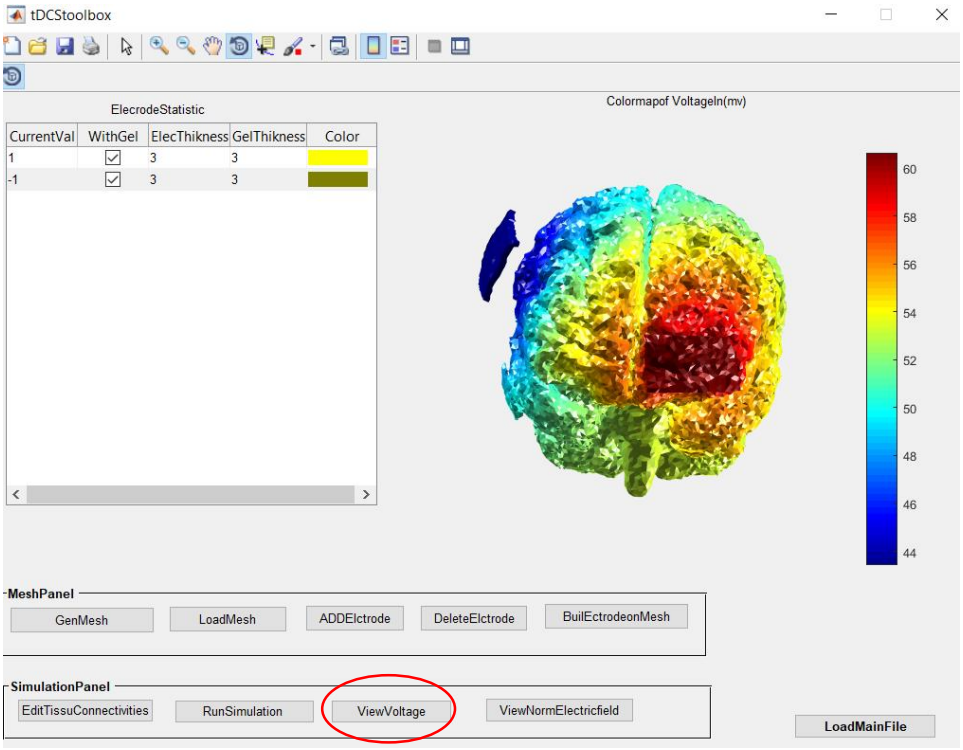
10-If you want to edit connectivity's of tissues, there is a button in main window for that purpose

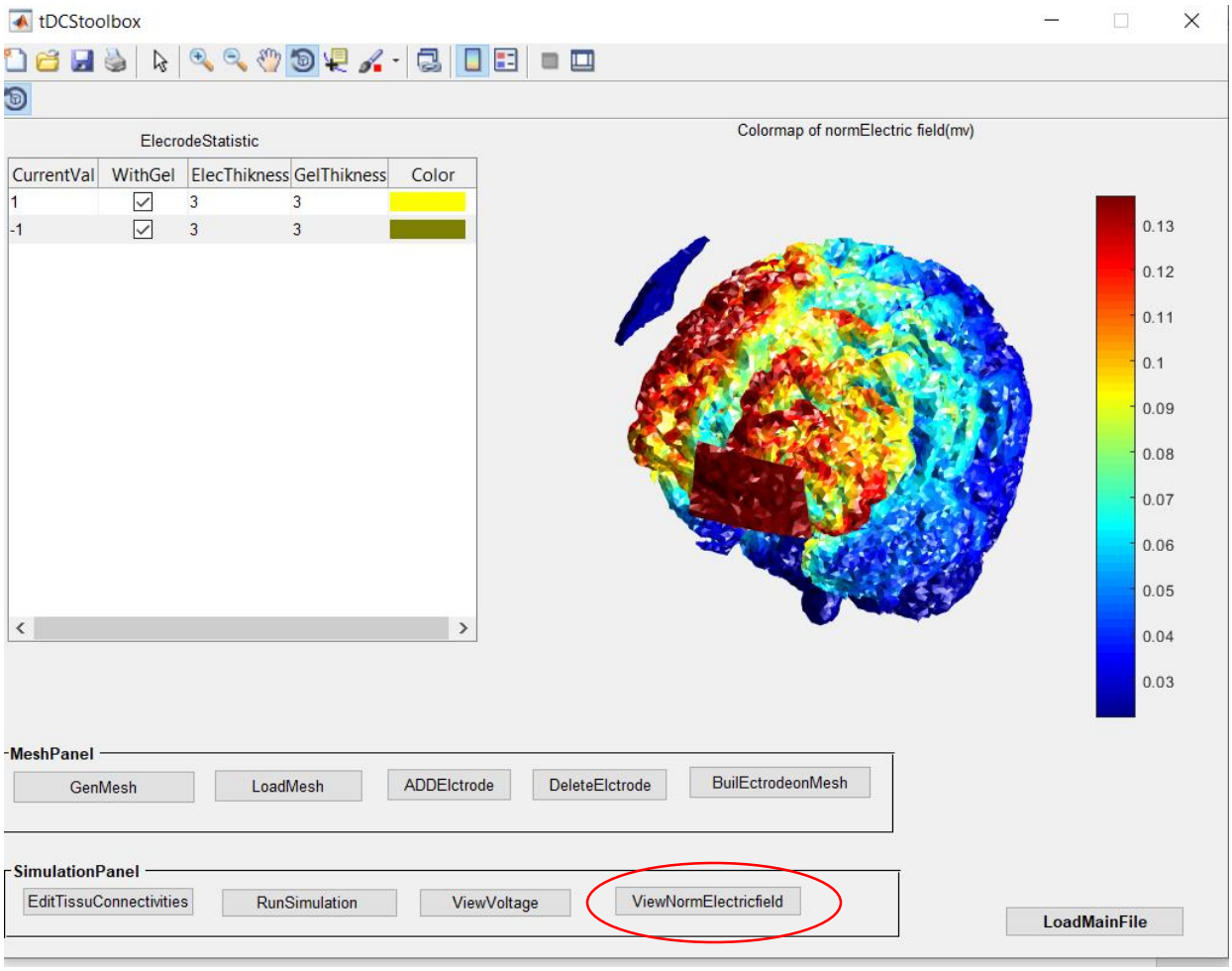


11-finally run the simulation by clicking on (RunSimulation) button as shown below.



12-Two button for viewing the results of the distributed voltage or norm electric field in cortical white matter of brain as shown below.




tDCStoolbox
ElecrodeStatistic
CurrentVal
WithGel
ElecThikness
GelThikness
Color
1
3
3
-1
3
3
Colormap of normElectric field(mv)
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
MeshPanel
GenMesh
LoadMesh
ADDElctrode
DeleteElctrode
BuilEctrodeonMesh
SimulationPanel
EditTissuConnectivities
RunSimulation
ViewVoltage
ViewNormElectricfield
LoadMainFile